CLAIMS

1-68. Canceled.

69. (Currently Amended) An optical switching device, comprising:

an optical switch matrix having one or more optical switches that are capable of redirecting optical channels passing therethrough;

an input port coupled to the optical switch matrix that receives at least one input channel and transmits the at least one channel to the optical switch matrix;

an output port coupled to the optical switch matrix that receives at least one output channel from the optical switch matrix;

an add port coupled to the optical switch matrix that inputs add channels to the optical switch matrix, each said add channel being tuned to a selected wavelength by said add port; and

a drop port coupled to the optical switch matrix that receives dropped channels from the optical switch matrix;

wherein the switches of the optical switch matrix can be selectively configured so that the at least one input channel is directed to the drop port and at least one add channel is directed to the output port;

wherein the optical switch matrix includes a first array of switches and a second array of switches; and

~~The optical switching device of claim 68~~ wherein the first array of switches and the second array of switches are respective N x M arrays of switches, and the input port and the drop port are coupled to the first array of

switches, and the add port and the output port are coupled to the second array of switches.

70. (Previously Presented) The optical switching device of claim 69, wherein the optical switch matrix is a microelectrical mechanical system having an array of micromirrors arranged on a substrate.

71. (Previously Presented) The optical switching device of claim 70, wherein the first array of switches redirects optical channels from the input port to the drop port, and the second array of switches redirects optical channels from the add port to the output port.

72. (Currently Amended) An optical switching device, comprising:

an optical switch matrix having one or more optical switches that are capable of redirecting optical channels passing therethrough;

an input port coupled to the optical switch matrix that receives at least one input channel and transmits the at least one channel to the optical switch matrix;

an output port coupled to the optical switch matrix that receives at least one output channel from the optical switch matrix;

an add port coupled to the optical switch matrix that inputs add channels to the optical switch matrix, each said add channel being tuned to a selected wavelength by said add port; and

a drop port coupled to the optical switch matrix that receives dropped channels from the optical switch matrix;

wherein the switches of the optical switch matrix can be selectively configured so that the at least one input channel is directed to the drop port and at least one add channel is directed to the output port;

wherein the optical switch matrix includes a first array of switches and a second array of switches; and

~~The optical switching device of claim 68,~~ wherein the first array of switches is an M x M array of switches, the second array of switches is an N x M array of switches, the add port is coupled to the first array of switches and the input port, output port, and drop port are coupled to the second array of switches.

73. (Previously Presented) The optical switching device of claim 72, wherein the optical switch matrix is a microelectrical mechanical system having an array of micromirrors arranged on a substrate.

74. (Previously Presented) The optical switching device of claim 73, wherein an input channel is re-directed to a drop port by a front surface of a first micromirror of the N x M array of switches, and an add channel is redirected to an output port by a front surface of a second micromirror of the first array of switches and a back surface of the first micromirror of the second array of switches.

75-83. Canceled

84. (Currently Amended) Apparatus comprising

a first row-and-column optical switch array and a second row-and-column optical switch array, the columns of said first and second optical switch arrays being aligned with one another,

an input port and an output port, said input port being adapted to launch a plurality of input channels along respective rows of said first optical switch array to said output port, an add port adapted to launch add channels along respective rows of said second optical switch array, said second optical switch array being operable to divert any of said add channels along any of the columns of said second optical switch array to the aligned column of said first optical switch array,

said first optical switch array having a micromirror at each row/column intersection, each said micromirror having a reflective first surface and a reflective second surface and being operable to reflect an input channel from said ~~front~~ first reflective surface and thereby divert that input channel from its respective row, and to reflect an add channel from said second surface and thereby divert that add channel from its respective column onto the row of the diverted input channel.

85. (Previously Presented) The invention of claim 84 wherein said first and second surfaces are front and back surfaces, respectively.

86. (Currently Amended) Apparatus comprising

a first optical switch array comprising a plurality of micromirrors each having a reflective first surface and a reflective second surface,

a second optical switch array,

an input port adapted to launch a plurality of input channels at respective ones of a plurality of wavelengths into said first optical switch array,

an output port, said input port, said output port ~~and output ports~~ and said first optical switch array being such that each of said input channels can pass through said first optical switch array to said output port, at least an individual one of said micromirrors being operable to cause a respective input

channel to be reflected off the first surface of that micromirror and be thereby diverted from said output port, and

an add port adapted to launch add channels into said second optical switch array, said add port and said first and second optical switch arrays being such that, and said second optical switch array being operable such that, any of said add channels can be directed to the second surface of any operated one of said micromirrors and thereby be directed to said output port at any of said wavelengths.

87. (Previously Presented) The invention of claim 86 wherein said first and second surfaces are front and back surfaces, respectively.

88-89. Canceled.